



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE



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In re Application of  
Toyohisa OYA et al.  
Serial No. 09/809,178

Group Art Unit: 1752

Filed: March 16, 2001

Examiner: Thorl Chea

For: PHOTOTHERMOGRAPHIC MATERIAL AND METHOD FOR  
FORMING IMAGES

DECLARATION UNDER 37 CFR 1.132

Honorable Commissioner of Patents and Trademarks,  
Washington, D.C. 20231

Sir:

I, Toyohisa OYA, a Japanese citizen, working at No.210, Nakanuma Minami-ashigara-shi, Kanagawa 250-0123 Japan, hereby declare and state that I received a Master's Degree from Hokkaido University, the department of Science, the course of Chemistry, in March of 1992, and that I was employed by Fuji Photo Film Co., Ltd. in April of 1992 and since that time I have been principally engaged in research and development of photographic materials, particularly synthesis of the photographic materials and use of the materials in photography and other technical fields, at Ashigara Laboratories of the company.

I declare further that I have read all of the documents contained in the file wrapper of the above-entitled application.

I declare further that the test described below was conducted at my

direction and under my supervision and the test results are true and correct to the best of my knowledge.

#### EXPERIMENT 1: Comparison with Takeuchi

A photographic light-sensitive material was prepared in the same manner as the preparation of Photographic light-sensitive material No.105 (Sample No.105) of Example 1 in Takeuchi, U.S. Patent No. 5,851,745, except that each of Yellow coupler (C-21), Magenta coupler (C-40) and Cyan coupler (C-43) was replaced by equimolar Compound (I-1) disclosed on page 31 of the specification of the present application. The obtained material was subjected to the light-exposure and the development treatment, and then the maximum color densities were measured as set forth in Example 1 of Takeuchi.  $D_{\max}$  (yellow) = 0.01,  $D_{\max}$  (magenta) = 0.01 and  $D_{\max}$  (cyan) = 0.01 were obtained. The photographic light-sensitive material showed very poor sensitivity. This experimental result indicates that when the coupler used in Takeuchi is simply replaced by the claimed compound of formula (1), practical material can not be obtained.

#### EXPERIMENT 2: Comparison with Takeuchi

A photographic light-sensitive material was prepared in the same manner as the preparation of Photographic light-sensitive material No.206 (Sample No.206) of Example 2 in Takeuchi, U.S. Patent No. 5,851,745, except that each of Yellow coupler (C-21), Magenta coupler (C-40) and Cyan coupler (C-43) was replaced by equimolar Compound (I-1) disclosed on page 31 of the specification of the present application. The obtained material was subjected to the light-exposure and the development treatment, and then the maximum color densities were measured as set forth in Example 2 of Takeuchi.  $D_{\max}$  (yellow) = 0.02,  $D_{\max}$  (magenta) = 0.01 and  $D_{\max}$  (cyan) = 0.01 were obtained. The photographic light-sensitive material showed very poor sensitivity. This experimental result also indicates that

when the coupler used in Takeuchi is simply replaced by the claimed compound of formula (1), practical material can not be obtained.

#### EXPERIMENT 3: Comparison with Takeuchi

A photographic light-sensitive material was prepared in the same manner as the preparation of Photographic light-sensitive material No.105 (Sample No.105) of Example 1 in Takeuchi, U.S. Patent No. 5,851,745, except that each of Color developing agent (I-16) was replaced by equimolar Compound (I-1) disclosed on page 31 of the specification of the present application and Compound (D-119) disclosed on page 15 of the specification of the present application. The amount of Compound (D-119) was 1 mole % (0.01 times molar) of the amount of Compound (I-1). The obtained material was subjected to the light-exposure and the development treatment, and then the maximum color densities were measured as set forth in Example 1 of Takeuchi.  $D_{\max}$  (yellow) = 0.03,  $D_{\max}$  (magenta) = 0.02 and  $D_{\max}$  (cyan) = 0.02 were obtained. The photographic light-sensitive material showed very poor sensitivity. This experimental result indicates that when the coupler of Takeuchi is replaced by the claimed compound of formula (1) and the claimed compound of formula (2) or (3) in the claimed molar ratio, practical material can not be obtained.

#### EXPERIMENT 4: Comparison with Takeuchi

A photographic light-sensitive material was prepared in the same manner as the preparation of Photographic light-sensitive material No.206 (Sample No.206) of Example 2 in Takeuchi, U.S. Patent No. 5,851,745, except that each of Color developing agent (I-16) was replaced by equimolar Compound (I-1) disclosed on page 31 of the specification of the present application and Compound (D-119) disclosed on page 15 of the specification of the present application. The amount of Compound (D-119) was 1 mole % (0.01 times molar) of the amount of Compound (I-1). The obtained

material was subjected to the light-exposure and the development treatment, and then the maximum color densities were measured as set forth in Example 2 of Takeuchi.  $D_{\text{max}}$  (yellow) = 0.03,  $D_{\text{max}}$  (magenta) = 0.03 and  $D_{\text{max}}$  (cyan) = 0.02 were obtained. The photographic light-sensitive material showed very poor sensitivity. This experimental result indicates that when the coupler used in Takeuchi is replaced by the claimed compound of formula (1) and the claimed compound of formula (2) or (3) in the claimed molar ratio, practical material can not be obtained.

#### EXPERIMENT 5: Comparison with Nakamura et al.

A photographic light-sensitive material was prepared in the same manner as the preparation of Photographic light-sensitive material No.102 of Example 1 in Nakamura et al., U.S. Patent No. 6,013,421, except that each of Yellow coupler (13), Magenta coupler (2) and Cyan coupler (1 and C-34) was replaced by equimolar Compound (I-1) disclosed on page 31 of the specification of the present application. The obtained material was subjected to the light-exposure and the development treatment, and then the maximum color densities were measured as set forth in Example 1 of Nakamura et al.  $D_{\text{max}}$  (yellow) = 0.02,  $D_{\text{max}}$  (magenta) = 0.01 and  $D_{\text{max}}$  (cyan) = 0.00 were obtained. The photographic light-sensitive material showed very poor sensitivity. This experimental result indicates that when the coupler of Nakamura et al. is simply replaced by the claimed compound of formula (1), practical material can not be obtained.

#### EXPERIMENT 6: Comparison with Nakamura et al.

A photographic light-sensitive material was prepared in the same manner as the preparation of Photographic light-sensitive material No.305 of Example 3 in Nakamura et al., U.S. Patent No. 6,013,421, except that each of Yellow coupler (3), Magenta coupler (2) and Cyan coupler (1) was replaced by equimolar Compound (I-1) disclosed on page 31 of the

specification of the present application. The obtained material was subjected to the light-exposure and the development treatment, and then the maximum color densities were measured as set forth in Example 3 of Nakamura et al. Dmax (yellow) = 0.02, Dmax (magenta) = 0.01 and Dmax (cyan) = 0.01 were obtained. The photographic light-sensitive material showed very poor sensitivity. This experimental result indicates that when the coupler of Nakamura et al. is simply replaced by the claimed compound of formula (1), practical material can not be obtained.

#### EXPERIMENT 7: Criticality of the claimed molar ratio

Photothermographic materials 701 to 704 were prepared in the same manner as the preparation of Photothermographic material No.108 (Sample No.108) of Example 1 in the specification of the present application except that the amount of Compound (D-119) was changed to 10  $\mu$ mol (0.06 mole % of the amount of Compound (I-1)), 17.5  $\mu$ mol (0.12 mole % of the amount of Compound (I-1)), 1.3 mmol (8.3 mole % of the amount of Compound (I-1)) and 1.9 mmol (12.1 mole % of the amount of Compound (I-1)), respectively. The obtained materials were subjected to the light-exposure and the development treatment at 119°C for 20 seconds (Condition A), and then Dmax, fog and relative sensitivity to Sample No. 101 were measured as set forth in Example 1 of the specification. The results are shown below:

Sample No.	(D-119)/(I-1)	Dmax	Fog	Relative Sensitivity	Note
701	0.06 %	1.45	0.12	0.00	Comparative
702	0.12 %	1.47	0.11	0.02	Invention
703	8.3 %	1.66	0.29	0.45	Invention
704	12.1 %	1.63	strong	-	Comparative

Sample No. 701 having a (D-119)/(D-1) ratio of less than 0.1% showed no improvement of sensitivity. Sample No. 704 having a (D-119)/(D-1) ratio of more than 10% is not practical due to the strong fog. Sample Nos. 702 and 703 having a (D-119)/(D-1) ratio of the claimed range showed improvement of sensitivity and low fog. This result indicates that the range of 0.1 mole % to 10 mole % is critical in the claimed invention. I believe that the criticality of the claimed range is not predictable from Takeuchi, Nakamura et al. and Cerquone et al.

I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application of any patent issuing thereon.

Dated this 16<sup>th</sup> day of September, 2003.

Toyohisa Oya

Toyohisa OYA